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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/615,527	07/08/2003	Rainer Graumann	P03,0215	8192
26574	7590	05/15/2007		
SCHIFF HARDIN, LLP PATENT DEPARTMENT 6600 SEARS TOWER CHICAGO, IL 60606-6473			EXAMINER KISH, JAMES M	
			ART UNIT	PAPER NUMBER
			3737	
			MAIL DATE	DELIVERY MODE
			05/15/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/615,527

Applicant(s)

GRAUMANN ET AL.

Examiner

James Kish

Art Unit

3737

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 20 April 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

Applicant's arguments with respect to claims 1-17 have been considered. A new ground of rejection has been made, however, no new prior art have been introduced within the new rejections.

With respect to Applicant's argument on page 9 stating, "modifying the Foley et al. reference [with the teachings of, particularly, Kienzie, III et al.] still would not result in an apparatus or method conforming to any of claims 5, 14 or 15, in view of the aforementioned differences between the subject matter of the independent claims..." is not persuasive for the following reasons. The Kienzie reference teaches a clamp, or medical instrument, comprising a toothed jaw for rigidly affixing to a bone to which surgery is being performed. A point of surgery is determined directly from the reference frame created by the clamp upon being affixed to the bone and as the bone moves, the point of surgery is translated/rotated based on the tracking of the medical instrument. See column 19, line 39 through column 20, line 65.

With respect to Applicant's arguments that none of the references disclose a segmentation procedure, Examiner notes that Foley provides such a procedure as understood in its broadest reasonable interpretation. A segmentation process does not necessarily isolate one group from another in an image, thereby allowing sections of an image to move independently from one another. A segmentation process allows identification of objects above background noise using image-processing methods (see [www.nature.com/focus/cellbioimaging/glossary/index.html](http://www.nature.com/focus/cellbioimaging/glossary/index.html)). This is described in Foley

as a discrimination process and is used to remove unnecessary data, leaving only the bone fragments in the image.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Foley et al. (6,167,145) in view of Kienzie, III et al. (US Patent No. 6,285,902). Foley discloses a bone navigation system and methods for such a system. The system includes a processor for modifying an image data set during the procedure. The system accounts for movement that can occur between portions of the skeleton that are not rigidly joined, such as fragments of a broken bone (column 1, line 55 through column 2, line 2). Registration is provided by several methods, including physical contact by a registration probe (column 6, line 48 through column 7, line 16), fixation of the patient within a frame (column 7, lines 16-34), as well as image registration (column 8, line 59 through column 9, line 32). See column 9, line 63 through column 10, line 14 for discussion of medical instruments. The images are imaged using any of several different modalities, including, but not limited to, CT. Also see column 2, line 54 through column 3, line 24. However, the medical instrument of Foley does not directly determine a position of the bone. Kienzie teaches a clamp, or medical instrument,

comprising a toothed jaw for rigidly affixing to a bone to which surgery is being performed. A point of surgery is determined directly from the reference frame created by the clamp upon being affixed to the bone and as the bone moves, the point of surgery is translated/rotated based on the tracking of the medical instrument. See column 19, line 39 through column 20, line 65. Kienzle teaches the use of CT imaging using a C-arm, at any point during a procedure, to image unexposed bone (column 1, lines 28-32). As discussed in column 8, lines 14-39, the C-arm is able to be rotated or inclined as desired. It would have been obvious to one having ordinary skill in the art at the time the invention was made to include a movable C-arm, as taught by any of Kienzle as the imaging device for the system disclosed by Foley because it is well-known in the art to use such a device for imaging bone fragments during a procedure, as stated by Kienzie. Also, it would be obvious to use a medical instrument as described by Kienzie to localize a bone fragment during surgery in cases where the immobility of the body part cannot be insured to provide verifiable information as to the location of a point of surgery (column 19, lines 25-37).

### ***Conclusion***

Other related prior art:

Simon et al.	2003/0073901
Ben-Haim et al.	6,498,944
Sati	6,801,801
Maurer, Jr. et al.	6,560,354

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Kish whose telephone number is 571-272-5554.

The examiner can normally be reached on 8:30 - 5:00 ~ Mon. - Fri..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Casler can be reached on 571-272-4956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JMK

  
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